

WHAT IS CLAIMED IS:

1. A roller turret type rotary motion transmitting device including a worm and a roller turret which engage each other such that said worm and said roller turret are rotatable about respective two axes that are spaced apart from each other and intersect each other, wherein said roller turret comprises:

a turret body having a plurality of mounting holes formed therein such that said mounting holes are arranged in a rotating direction of said turret body;

a plurality of roller shafts each including a roller support portion, and a stud portion which is eccentric with respect to said roller support portion;

a plurality of rollers rotatably mounted on the roller support portions of said plurality of roller shafts, respectively; and

fixing means provided for each of said mounting holes, for fixing said stud portion of the corresponding roller shaft to said turret body, at a desired angular position of said corresponding roller shaft,

wherein said fixing means includes a plurality of setscrews provided for said plurality of roller shafts, respectively, each of said setscrews being disposed in said turret body such that said each setscrew is movable in a direction intersecting a centerline of a corresponding one of said mounting holes, for forcing said stud portion of said corresponding roller shaft onto an inner circumferential surface of said corresponding one of said mounting holes.

2. A roller turret type rotary motion transmitting device according to claim 1, wherein said fixing means includes a filler material for filling a gap between an outer circumferential surface of said stud portion and an inner circumferential surface of a corresponding one of said mounting holes, so that said roller turret is fixed by said filler material to said turret body at said stud portion.

3. A roller turret type rotary motion transmitting device according to claim 1, wherein each of said plurality of roller shafts carries two mutually concentric rollers rotatably mounted on said roller support portion such that said two mutually concentric rollers are rotatable independently of each other, and said worm includes a rib having two portions which are spaced apart from each other in an axial direction of said worm and which have respective two opposite surfaces defining a groove therebetween, said two opposite surfaces of said groove being shaped such that one of said two rollers mounted on said each roller shaft is engageable with one of said two opposite surfaces while the other of said two rollers is engageable with the other of said two opposite surfaces.

4. A roller turret type rotary motion transmitting device according to claim 1, further including a housing body, a bearing, and a bearing housing supported by said housing body, and wherein said roller turret further comprises a turret shaft which is rotatable with said turret body and rotatably supported by said bearing housing through said bearing such that radial and axial movements of said turret shaft and inclination of said turret shaft in all directions relative to said bearing housing are prevented, and wherein said turret body, said turret shaft, said bearing and said bearing housing constitute a sub-assembly which is removably mounted on said housing body.

5. A roller turret type rotary motion transmitting device according to claim 1, wherein each of said plurality of roller shafts rotatably carries a corresponding one of said plurality of rollers, and said worm has a plurality of ribs defining a plurality of grooves, each of said grooves being defined by two opposite surfaces of adjacent ones of said ribs, said two opposite surfaces being shaped such that each of the rollers is engageable with one of said two opposite surfaces but is not engageable with the other of said two opposite surfaces.

6. A roller turret type rotary motion transmitting device including a worm and a roller turret which engage each other such that said worm and said roller turret are rotatable

about respective two axes that are spaced apart from each other and intersect each other,
wherein said roller turret comprises:

a turret body having a plurality of mounting holes formed therein such that
said mounting holes are arranged in a rotating direction of said turret body;

a plurality of roller shafts each including a roller support portion, and a stud
portion which is eccentric with respect to said roller support portion;

a plurality of rollers rotatably mounted on the roller support portions of said
plurality of roller shafts, respectively; and

fixing means provided for each of said mounting holes, for fixing said stud
portion of the corresponding roller shaft to said turret body, at a desired angular position of
said corresponding roller shaft,

wherein said fixing means includes a filler material for filling a gap between
an outer circumferential surface of said stud portion and an inner circumferential surface of a
corresponding one of said mounting holes, so that said roller turret is fixed by said filler
material to said turret body at said stud portion.

7. A roller turret type rotary motion transmitting device according to claim 6,
wherein each of said plurality of roller shafts carries two mutually concentric rollers rotatably
mounted on said roller support portion such that said two mutually concentric rollers are
rotatable independently of each other, and said worm includes a rib having two portions
which are spaced apart from each other in an axial direction of said worm and which have
respective two opposite surfaces defining a groove therebetween, said two opposite surfaces
of said groove being shaped such that one of said two rollers mounted on said each roller
shaft is engageable with one of said two opposite surfaces while the other of said two rollers
is engageable with the other of said two opposite surfaces.

8. A roller turret type rotary motion transmitting device according to claim 6, further including a housing body, a bearing, and a bearing housing supported by said housing body, and wherein said roller turret further comprises a turret shaft which is rotatable with said turret body and rotatably supported by said bearing housing through said bearing such that radial and axial movements of said turret shaft and inclination of said turret shaft in all directions relative to said bearing housing are prevented, and wherein said turret body, said turret shaft, said bearing and said bearing housing constitute a sub-assembly which is removably mounted on said housing body.

9. A roller turret type rotary motion transmitting device according to claim 6, wherein each of said plurality of roller shafts rotatably carries a corresponding one of said plurality of rollers, and said worm has a plurality of ribs defining a plurality of grooves, each of said grooves being defined by two opposite surfaces of adjacent ones of said ribs, said two opposite surfaces being shaped such that each of the rollers is engageable with one of said two opposite surfaces but is not engageable with the other of said two opposite surfaces.